CIVIL AIM CONSULTANTS & ENGINEERS

(Building Geo-Tech & Highway Materials Testing Laboratory)

An ISO 9001-2015 Certified Company

NABL Accredited As Per ISO/IEC 17025:2017 Laboratory

Job No.: CACE/BBMP/GV/W.No.01/2021-22 Date: 15.10.2021

TEST REPORT

CLIENT	:	**Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
AGENCY	:	**Sri. G Venkategowda,** Contractor, Bangalore.
NAME OF THE WORK	:	Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No 01, BBMP, Bangalore.
SAMPLE ID	:	Cement (Zuari OPC 53 Grade)
DATE OF MANUFACTURE		September - 2021
DATE OF TESTING		13.10.2021 to 15.10.2021
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 269-2015
1	a) Intial Setting Time	IS-4031 (Part -5)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	330 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	29.00 %	-

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For CIVIL AIM CONSULTANTS & ENGINEERS

Authorised Signatory

No.01, Satvika Nilaya, Opp. Widia Poorna Prajna School,
Ramaiah layout, Nagasandra, Bangalore - 560 073.
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Job No.: CACE/BBMP/KMN/W.No.21/2021-22 Date : 15.10.2021

TEST REPORT ON FINE AGGREGATES (SAND)

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. G Venkategowda,** Contractor, Bangalore.

Name of Work : Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No.01, BBMP, Bangalore.

Date of Testing : 15.10.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : Sand Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Requirements as per IS 383:2016 Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	89	8.90	8.90	91.1	90-100
2.36	116	11.60	20.50	79.5	75-100
1.18	182	18.20	38.70	61.3	55-90
600 Micron	245	24.50	63.20	36.8	35-59
300 Micron	186	18.60	81.80	18.2	8-30
150 Micron	139	13.90	95.70	4.3	0-10

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Job No.: CACE/BBMP/KMN/W.No.21/2021-22

Date : 15.10.2021

TEST REPORT ON COARSE AGGREGATES

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. G Venkategowda,** Contractor, Bangalore.

Name of Work : Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No.01, BBMP, Bangalore.

Date of Testing : 15.10.2021

IS Code : IS 383:2016

: IS 2386 (Part 1):1963(RA 2011)

Material : 20mm Aggregates

Total Wt. of Aggregates in gms= 5000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Requirements as per IS 383:2016
40	0	0	0	100	100
20	184	3.7	3.7	96.3	95-100
10	2830	56.6	60.3	39.7	25-55
4.75	1765	35.3	95.6	4.4	0-10

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Job No.: CACE/BBMP/GV/W.No.01/2021-22 Date : 15.10.2021

TEST REPORT ON FINE AGGREGATES (SAND)
IS 2116-1980

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. G Venkategowda,** Contractor, Bangalore.

Name of Work : Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No.01, BBMP, Bangalore.

Date of Testing : 15.10.2021

Material : Sand - Masonry

Total wt. of aggregates in gms = **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 2116-1980
4.75	0	0.00	0.00	100.0	100
2.36	14	1.40	1.40	98.6	90-100
1.18	38	3.80	5.20	94.8	70-100
600 Micron	89	8.90	14.10	85.9	40-100
300 Micron	285	28.50	42.60	57.4	5-70
150 Micron	482	48.20	90.80	9.2	0-15

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Job No.: CACE/BBMP/GV/W.No.01/2021-22 Date: 27.10.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. G Venkategowda,** Contractor, Bangalore.

Name of the work : Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No.01, BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.10.2021	27.10.2021	8.155	329.6	14.65
2	20.10.2021	27.10.2021	8.136	337.5	15.00
3	20.10.2021	27.10.2021	8.145	342.6	15.23

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Job No.: CACE/BBMP/GV/W.No.01/2021-22 Date: 27.10.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. G Venkategowda,** Contractor, Bangalore.

Name of the work : Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No.01, BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.10.2021	27.10.2021	8.168	338.2	15.03
2	20.10.2021	27.10.2021	8.189	326.9	14.53
3	20.10.2021	27.10.2021	8.172	352.4	15.66

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Job No.: CACE/BBMP/GV/W.No.01/2021-22 Date: 17.11.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. G Venkategowda,** Contractor, Bangalore.

Name of the work : Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No.01, BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS. 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{30}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.10.2021	17.11.2021	8.184	501.2	22.28
2	20.10.2021	17.11.2021	8.156	479.6	21.32
3	20.10.2021	17.11.2021	8.138	488.9	21.73

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Job No.: CACE/BBMP/GV/W.No.01/2021-22 Date: 28.10.2021

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Client : **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.

Agency : **Sri. G Venkategowda,** Contractor, Bangalore.

Name of the work : Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No.01, BBMP, Bangalore.

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 7th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	21.10.2021	28.10.2021	8.174	342.2	15.21
	21.10.2021	28.10.2021	8.169	332.6	14.78
	21.10.2021	28.10.2021	8.156	329.4	14.64

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Name of Work:

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Job No.: CACE/BBMP/GV/W.No.01/2021-22 Date : 15.11.2021

TEST REPORT ON PRE-POLISHED DESIGNER CEMENT CONCRETE TILES

Client	: **Assistant Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
Contractor	: **Sri. G Venkategowda,** Contractor, Bangalore.
Name of the Work	: Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No.01, BBMP, Bangalore.
Sample ID	: Pre-Polished Designer Cement Concrete Tiles - 25mm thick
Technical Reference	: IS: 1237-1980 (Reaffirmed 2006)
No. of Samples Tested	: 12 (Twelve)
Date of Testing	: 12.11.2021 to 15.11.2021

I. WET TRANSVERSE STRENGTH TEST:

Sl. No.	Wet Transverse Strength (N/mm^2)	Average (N/mm^2)	Requirement as per IS: 1237-1980 (Reaffirmed 2006)
1	4.8	4.30	The average wet transverse strength should not be less than 3.0 N/mm^2 when 6 full size tiles are tested.
2	3.9		
3	4.6		
4	4.5		
5	4.2		
6	3.8		

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II. WATER ABSORPTION TEST:

Sl. No.	Water Absorption (% by Wt)	Average (% by Wt)	Requirement as per IS: 1237-1980 (Reaffirmed 2006)
1	6.9	6.67	The average percentage of water absorption should not exceed 10% when 6 full size tiles are tested.
2	5.8		
3	6.2		
4	6.5		
5	7.1		
6	7.5		

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Job No.: CACE/BBMP/GV/W.No.01/2021-22 Date: 23.11.2021

TEST REPORT

Client	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Agency	:	Sri. G Venkategowda, Contractor, Bangalore.
Name of the work	:	Construction of Compound Wall and Improvements to Yelahanka Govt High School Premises at Yelahanka Old Town in Ward No.01, BBMP, Bangalore.
Type of the test	:	Physical tests on Paver Blocks
Samples supplied by	:	AGENCY

The results of the tests conducted on the Paver Blocks sample are as follows:

1. THICKNESS:

Sl.No	Identification	Thickness, mm	Average thickness, mm
1	01	60.14	60.12
2	02	60.10	

2. COMPRESSIVE STRENGTH:

Sl. No	Identification	Load in Kilo-Newton	Cross sectional area, mm^2	Compressive strength N/mm^2	Compressive strength Kg/m^2	Requirement as Specification
1	01	689.5	24,200	28.49	284.9	Minimum required Compressive Strength of Individual Units 281 Kg/m^2
2	02	692.5	24,200	28.61	286.1	

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III. HARDNESS:

Sl. No.	Moh's scale Hardness No.
1	5
2	5
3	5
4	5
5	5
6	5

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